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As a former employee of Microsoft who was part of the engineering effort behind IE, I have followed the United States vs. Microsoft case with great interest. Now that a Proposed Final Judgment has been filed, I would like to offer my comments as part of the public commentary provided for by the Tunney Act.

In order for the Proposed Final Judgment to meet the standards of a remedies decree in an antitrust case, it must free the market from anticompetitive conduct by the defendant, terminate the defendant's illegal monopoly, deny the defendant the fruits of their illegal actions, and prevent the defendant from abusing their monopoly in the future. I will briefly examine the how the Proposed Final Judgment addresses each of these requirements.

A variety of anticompetitive conduct was found in the course of the trial. This included restrictive OEM contracts and restrictive and exclusionary dealings with internet access providers and software developers. Microsoft also engaged in a campaign to mislead, confuse, and threaten software developers in an attempt to constrain Java, and illegally tied their Internet Explorer (IE) browser software to the Windows Operating System.

The Proposed Final Judgment attempts to address the restrictive OEM contracts by constraining the terms Microsoft can use in OEM contracts. However, it only addresses a segment of the OEM market, that being the 20 largest OEMs. Smaller OEMs, including local and regional OEMs, are not covered by the terms of the agreement and remain subject to prejudicial pricing and uncertain access to Microsoft's operating systems. This is thus at best a partial remedy, and leaves a significant portion of the OEM market vulnerable to strong arm tactics.

Attempts are also made by the Proposed Final Judgment to eliminate exclusionary contracts with OEMs, internet access providers and software developers. However, an exception states that Microsoft may enter into fixed percentage contracts if it is "commercially practicable for the entity to provide equal or greater distribution, promotion, use or support for software that competes with Microsoft Platform Software" (III.G.1.) Given that zero cost competitors exist today (many Linux distributions come to mind), this clause renders the prohibition effectively void.

While some attempt is made by the Proposed Final Judgment to prevent Microsoft from threatening software developers, no effort is made to prevent a campaign of the sort used to confuse and mislead developers considering Java. To this day we continue to see publicity efforts to marginalize Java, and we are seeing another such campaign underway to spread fear, uncertainty, and doubt (FUD) about the viability of Linux (an alternative operating system). The Proposed Final Judgment does nothing to constrain this behavior.

The limitations of the Proposed Final Judgment can be seen quite clearly when one considers the means used by Microsoft to marginalize Java on the desktop. As described in the Competitive Impact Statement filed with the court, Microsoft pressured third parties not to support cross-platform Java, used technological means to maximize the difficulty with which Java applications could be ported from Windows to other platforms, and used other anticompetitive measures to discourage developers from creating cross-platform Java applications. While some of the more explicit means used (payoffs to keep applications on a single platform) are prohibited, most of the means used to stifle Java could still be used under the Proposed Final Judgment. This is a clear failure to address the very methods which were used to uphold Microsoft's monopoly.

In order to eliminate Microsoft's illegal monopoly, the Proposed Final Judgment ensures OEMs of the ability to include alternate operating systems on personal computers without fear of retaliation. However, this merely opens one distribution channel which had been illegally closed by exclusionary contracts. It does nothing to address other ways in which Microsoft's monopoly has been maintained.

Microsoft has also maintained its monopoly by maintaining a high Applications

Barrier to Entry, as described in the Competitive Impact Statement. One way to reduce this barrier is to provide a middleware solution which allows developers to write to an intermediate layer rather than to the underlying operating system. This is the approach taken by Java, and several other computer languages have taken similar approaches (Perl, Tcl, Python, and Ruby are examples). Another alternative is to duplicate the entire Windows API (application programming interface), allowing programs written for Windows to run elsewhere.

The Proposed Final Judgment attempts to require non-discriminatory documentation of the Windows API, but it only covers that portion of the API used to communicate with middleware by Microsoft applications. There is no requirement to provide non-discriminatory documentation for portions of the API which are used by non-Microsoft middleware, but not by Microsoft middleware. Further, no requirement is made that the complete API be documented, which means that Microsoft is under no obligation to aid an attempt to duplicate the API in its entirety. Furthermore, section III.J. explicitly permits Microsoft to exclude portions of the API which relate to systems concerned with authentication, encryption, digital rights management, anti-piracy, anti-virus, and software licensing. These shortcomings effectively cripple any attempt to duplicate the Windows API, and also serve to constrain the effectiveness of non-Microsoft middleware systems. Consequently, the Applications Barrier to Entry will remain high.

The Proposed Final Judgment also attempts to force the non-discriminatory documentation of all native communication protocols used to communicate with the Windows operating system. Again, though, we find the security exception of section III.J. crippling the intent. By simply requiring the protocol to begin with an authentication exchange, the protocol can be barred from non-Microsoft use. An analogy would be the case of a locked room, where the contents of the room are described in full, but the key is not available. Microsoft has already begun moving in this direction with the Passport service in the .NET initiative.

An additional barrier which exists for competing operating systems are the file formats used by Microsoft applications. If these formats were publicly available, then non-Microsoft applications could attempt to provide the application functionality on alternate operating systems, thereby increasing the attractiveness of alternate operating systems. Without a public file format, however, users remain locked into their existing applications, and the applications must move to alternate operating systems. Given that Microsoft is the single largest application software vendor in the world, we can expect no movement in this field. This is not addressed at all by the Proposed Final Judgment.

Finally, nothing in the Proposed Final Judgment would prevent Microsoft from making use of forward incompatibilities to frustrate middleware competitors. This tactic was used against DR-DOS when Microsoft moved from Windows 3.0 to Windows 3.1. At that time, Windows itself was middleware of a sort, sitting on top of the MS-DOS operating system. DR-DOS was a work-alike operating system which implemented all the functionality of MS-DOS, and which also would allow Windows 3.0 to run on top of it. When Windows 3.1 was released, it continued to run on MS-DOS, but when run on DR-DOS it mysteriously failed. Whether Windows 3.1 actually checked for the existence of DR-DOS, or merely made use of undocumented APIs within MS-DOS, the effect was the same. With the exploding popularity of Windows, DR-DOS shortly exited the marketplace. This same technique could be used to "break" popular middleware going forward from one version of Windows to another.

The fruits of Microsoft's illegal conduct have been continued dominance of the personal operating system market, as well as new dominance in the web browser market and marginalization of Java as a viable middleware solution. At the very least a denial of these benefits should promote non-Microsoft browser and middleware solutions and constrain further attempts by Microsoft to grow in these new markets. However, the Proposed Final Judgment does no more than make alternate browsers and middleware possible (and significant flaws exist in that attempt, as described above). The inertia of the

marketplace will likely leave IE as the dominant browser for the forseeable future, as the cost to merely compete with it would be prohibitive for all but the largest software companies, many of whom are fighting defensive battles elsewhere.

The Proposed Final Judgment also makes no attempt to restore Java as a middleware alternative, nor does it promote any other non-Microsoft middleware systems. Nor is Microsoft itself constrained from further middleware development. The C# language and common language runtime (CLR) specified in Microsoft's .NET initiative match many of the middleware features of Java. It is expected that Microsoft will use this to attempt to further marginalize Java as a middleware solution. Yet no mention of .NET is made in the Proposed Final Judgment, even in its definition of Microsoft middleware.

Several provisions are made within the Proposed Final Judgment to prevent Microsoft from again abusing its monopoly position with regards to middleware. However, absolutely no provisions are made to prevent leveraging the monopoly to expand into other markets, such as server operating systems, handheld computers, and game consoles. Yet these are all markets that Microsoft is actively trying to expand into, and they are already using their monopoly in desktop operating systems to leverage the server market. Unless the proposed remedy delimits the extent that Microsoft's monopoly can and cannot be used when moving into new markets, we can expect to find another antitrust suit wending its way through the courts within a few years.

The Proposed Final Judgment also delineates procedures for enforcement. Key to enforcement is the appointment of a technical committee of three individuals, one to be chosen by the plaintiffs, one to be chosen by the defendant, and one to be chosen by these two individuals after their selection. This seems contrary to common sense, however. It is unusual for an organization convicted of wrongdoing to be allowed an equal say in the choice of personnel to enforce compliance. While Microsoft should be allowed to object on reasonable grounds, it seems to me that the selection of the individuals charged with ensuring compliance should remain strictly with the Enforcement Authority, which under the Proposed Final Judgment would be the Plaintiffs.

Furthermore, the technical committee and their staff are strictly prohibited in their communications outside of Microsoft and the Plaintiffs. Thus, they shall disappear from public sight for the duration of their duties, and the only communications which they will make will come through the Plaintiffs or Microsoft. As a member of the public I can see no need for such a gag order to be placed upon the technical committee. Certainly they will have access to confidential documents and trade secrets, but this restriction of all public communication strikes me as excessive.

Moreover, whether or not Microsoft still has a monopoly, or is still abusing its monopoly, the Proposed Final Judgment will terminate in seven years. This even if Microsoft engages in a pattern of willful violation of the Proposed Final Judgment. A hard limit of this sort begs to be abused as the end of the term nears, and we may well find ourselves back in the courtroom once again.

The Proposed Final Judgment manages to check Microsoft on some fronts, but does not get to the core of the problem. Some of the anticompetitive conduct exercised by Microsoft is prohibited, but some remains. Rather than removing the monopoly, it allows it to continue, and may in fact allow new barriers to be raised preventing erosion. Microsoft is not significantly penalized for their abuses in the past, and in fact are allowed to retain their dominant position in the web browser market. The means used to deflect Java are not addressed, and .NET is ignored as an important new middleware product. Microsoft is not prevented from leveraging their monopoly to extend into other markets, as they are currently doing in an attempt to dominate the server operating system market. In conclusion, the Proposed Final Judgment fails to meet the standards of an antitrust case remedies decree, and as a result fails to serve the public interest.

Michael Jochimsen